

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference BET 04P0501	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/FR2004/001629	International filing date (day/month/year) 25.06.2004	Priority date (day/month/year) 03.07.2003
International Patent Classification (IPC) or national classification and IPC G06G3/32		
Applicant THOMSON LICENSING		

1.	This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.	
2.	This REPORT consists of a total of _____ sheets, including this cover sheet.	
3.	This report is also accompanied by ANNEXES, comprising: a. <input type="checkbox"/> (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows: <input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).	
4.	This report contains indications relating to the following items: <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application	

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

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Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This report is based on translations from the original language into the following language _____ which is the language of a translation furnished for the purposes of:
 - ☐ international search (Rule 12.3 and 23.1(b))
 - ☐ publication of the international application (Rule 12.4)
 - ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
 - ☐ the international application as originally filed/furnished
 - ☒ the description:
 - pages 1-16 _____ as originally filed/furnished
 - pages* _____ received by this Authority on _____
 - pages* _____ received by this Authority on _____
 - ☒ the claims:
 - nos. 1-4, 6-9 _____ as originally filed/furnished
 - nos.* _____ as amended (together with any statement) under Article 19
 - nos.* 5, 10, 11 received by this Authority on 04.05.2005 with letter of 29.04.2005
 - nos.* _____ received by this Authority on _____
 - ☒ the drawings:
 - sheets 1/3-3/3 _____ as originally filed/furnished
 - sheets* _____ received by this Authority on _____
 - sheets* _____ received by this Authority on _____
 - ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
 - ☐ the description, pages _____
 - ☐ the claims, nos. _____
 - ☐ the drawings, sheets/figs _____
 - ☐ the sequence listing (specify): _____
 - ☐ any table(s) related to sequence listing (specify): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 - ☐ the description, pages _____
 - ☐ the claims, nos. _____
 - ☐ the drawings, sheets/figs _____
 - ☐ the sequence listing (specify): _____
 - ☐ any table(s) related to sequence listing (specify): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1-11</u>	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	<u>1-11</u>	NO
Industrial applicability (IA)	Claims	<u>1-11</u>	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

1. Reference is made to the following documents in the present notification:

D1: US 2002/047817 A1 (TAM SIMON) 25 April 2002

D2: EP-A-1 005 013 (LUCENT TECHNOLOGIES INC) 31 May 2000

D2: EP-A-1 381 019 (PIONEER CORP) 14 January 2004 (2004-01-14)

D2: US 2002/101172 A1 (BU LIN-KAI) 1 August 2002 (2002-08-01)

D2: WO 02/071379 A (EMAGIN CORP) 12 September 2002 (2002-09-12)

- 1.1 Document D6 was not cited in the international search report. A copy of this document is attached.

D6: The art of electronics, Second edition published 1989, Chapter IV, Paul Horowitz, Winfield Hill, Cambridge University Press.

2. CLARITY

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2.1	<p>Claim 1 is unclear and fails comply with the requirements of PCT Article 6, for the following reasons:</p> <p>Claim 1 describes an electronic circuit for organic light-emitting diode array light modulator offset voltage compensation. It is impossible to reproduce the electronic circuit by means of the technical features set forth in claim 1. It is obvious that technical information is missing, essentially as regards the interfaces (the drain electrode of the modulator has not been defined, nor has the source electrode thereof, and it is also impossible to understand the function of the selection voltage) leading to the circuit described in detail on page 9, line 32 to page 11, line 17, in combination with claims 3 and 4. Some technical information is provided in the subsequent claims 2 to 4. Therefore, in the present report, the group of claims 1 to 4 will be examined as if it were a single independent claim.</p> <p>Furthermore, claim 1 fails to comply with the requirements of PCT Article 6 in so far as the subject matter for which protection is sought has not been clearly defined. This claim attempts to define said subject matter in terms of the aim to be achieved, which in this instance is an ability to compensate for the cut-out threshold voltage of at least one modulator, yet this merely amounts to stating the basic problem that the invention is intended to solve, with no indication of the</p>

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technical features required to achieve said result.

- 2.2 Although claims 1 and 10 have been drafted as separate independent claims, it appears that they have the same subject matter and that they differ only by virtue of a variation in the definition of the subject matter for which protection is sought. Therefore, these claims are not concise and accordingly fail to comply with the requirements of PCT Article 6.

3. INDEPENDENT CLAIMS 1 AND 10

- 3.1 The present application fails to comply with the requirements of PCT Article 33(1) since the subject matter of claim 10 does not involve an inventive step as defined in PCT Article 33(3). Document D2, which is considered to be the prior art closest to the subject matter of claim 10, describes (the reference signs between parentheses apply to this document) a control circuit for a current modulator having an undefined threshold voltage (paragraph 15), comprising means for compensating for said threshold voltage (paragraph 15, figure 4). The compensation means include at least one operational amplifier connected to a modulator gate electrode (paragraph 50, figure 8 in combination with figure 9 via transistor P3 in figure 9).

The subject matter of claim 10 differs from the

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teachings of D2 in that the operational amplifier is connected to the modulator source electrode, and the feedback thereof compensates for the modulator threshold voltage in such a way that the drain current strength through the modulator is not dependent on the cut-out threshold voltage of the modulator.

The problem that the present invention is intended to solve can thus be considered to be that of compensating for the threshold voltage using a reference voltage. The problem that the assembly mentioned in document D2 is intended to solve is not, strictly speaking, that of compensating for the threshold voltage. Instead, it is that of "abstracting" the threshold voltage using an assembly whereby the switching times between an on state and an off state can be programmed. To the extent that the operating requirements, e.g. a voltage shunt compensation by impedance matching, would force a person skilled in the art to compensate for said threshold voltage, such a person would use a basic assembly of an operational amplifier in feedback mode while controlling the output signal thereof, which assembly is commonly known as a "current source amplifier".

Consequently, a person skilled in the art seeking to solve the stated problem would combine the features in document D2 with their own technical knowledge, as disclosed in document D6 pages 181 or 261, without having to exercise inventive

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skill. It follows that the solution proposed in independent claim 10 cannot be considered to involve an inventive step (PCT Article 33(3)).

- 3.2 The present application fails to comply with the requirements of PCT Article 33(1) since the subject matter of claim 1 does not involve an inventive step as defined in PCT Article 33(3).

Document D2, which is considered to be the prior art closest to the subject matter of claim 1, describes (the reference signs between parentheses apply to this document) an active matrix display device including a plurality of light emitters arranged in rows and columns (paragraph 1, figure 10) as well as means for controlling the emission of the light emitters ("P1", figure 4). Document D2 goes on to say that the control means of the display device include, for each light emitter, a current modulator ("P1", figure 4), means for addressing columns by applying a data voltage (paragraph 51, figure 8), means for selecting rows by applying a selection voltage (paragraph 44, figure 7), and means for compensating for the cut-out threshold voltage of each modulator (paragraph 41, figure 7).

The threshold voltage compensation means include at least one operational amplifier (paragraph 50, figure 8).

The subject matter of claim 1 differs from the teachings of D2 in that the operational amplifier

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is connected to the modulator source electrode, and the amplifier feedback can thus compensate for the cut-out threshold voltage of at least one modulator.

The problem that the present invention is intended to solve can thus be considered to be the same as the one discussed under point 3.1 above.

Consequently, a person skilled in the art seeking to solve the stated problem would combine the features described in document D2 with their own technical knowledge, as disclosed in document D6 pages 181 or 261, without having to exercise inventive skill. It follows that the solution proposed in independent claim 1 cannot be considered to involve an inventive step (PCT Article 33(3)).

4. DEPENDENT CLAIMS

Dependent claims 2 to 9 and 11 do not contain any features which, when combined with the features of any of the claims to which they refer, comply with the requirements of inventive step of the PCT (PCT Article 33(3)).

Document D2 describes (the reference signs between parentheses apply to this document) control means comprising at least one first control switch connected between the amplifier output and the gate electrode of the modulator, and receiving the light emitter row selection voltage ("P3", figure

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9) .

Furthermore, the technical features described in document D2 (paragraph 44, figure 7, transistor "P3"), when combined with the general knowledge of a person skilled in the art, as disclosed in document D6 pages 181 or 261, with no inventive step being involved, would solve the stated problem, namely that of selecting a compensation circuit using a second switch having the same functionalities as the first switch.

It follows that the subject matter of claim 2 to 4 does not involve an inventive step as defined in PCT Article 33(3).

Moreover, document D2 also describes (the reference signs between parentheses apply to this document) how the operational amplifier is capable of compensating for all of the modulators controlling the emitters in one column (figure 3 and paragraph 46).

It follows that the subject matter of claim 5 does not involve an inventive step as defined in PCT Article 33(3).

Claims 6 to 9 and 11 do not contain any features which, when combined with the features of any one of the claims to which they refer, might define subject matter that complies with the requirements of inventive step of the PCT. The features defined in these claims merely relate to various technological options that would be obvious to a person skilled in the art and are as disclosed in

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document D2 (cf. paragraphs 55 to 57).